UNITED STATES PATENT AND TRADEMARK OFFICE

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10/678,266	10/06/2003	Alberto Morello	MORELLO1	3444

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12 March 2008_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-10_ is/are pending in the application.
      4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1,2,5 and 6_ is/are rejected.
7)☐ Claim(s) _3,4 and 7-10_ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
      Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
      Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
      a)☐ All   b)☐ Some * c)☐ None of:
          1.☐ Certified copies of the priority documents have been received.
          2.☐ Certified copies of the priority documents have been received in Application No. _____.
          3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
      * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
      Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
      Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

5.   Applicant's arguments with respect to claim1-10 have been considered but

are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

7.   Claims 1, 2 , and 6 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Zhang et al. (hereinafter referred to as Zhang) (US Pub

No. 2002/0159457) in view of Steer et al. (hereinafter referred to as Steer)

(US Pub. No. 2003/0103445) in further view of Elstermann (US Pat. No.

6,771,657).

Claim 1:

Zhang discloses

a transmitting station (see fig. 2C "transmitter 206") in which a multiplexer (see

"combining unit 412" [0062]) inserts null packets (see "filler packet" [0062],

[0051], and [0052]) in MPEG streams originating from one or more VBR coders

(see "VBR" [0050] and DCT MV and Aux info encoders 520, 522, and 524 in Fig.

5) so that their bit-rates are made uniform, and multiplexes them into a single transport stream (see [0078] and Fig. 8, where multiple compressed bit streams are multiplexed into a single transport stream) that is then applied to a modulating chain (the transmitters and receivers in Zhang's invention inherently have modulators and demodulators, see [0004] physical devices that generate and receive the signals (modulator/demodulator)) for transmission over a propagation channel (see Fig. 8 "channel 810"), and

a receiving station (shown in fig. 2C as "receiver 208") in which a demodulating chain (the transmitters and receivers in Zhang's invention inherently have modulators and demodulators, see [0004] physical devices that generate and receive the signals (modulator/demodulator)) receives the signal being transmitted over the channel (see Fig. 8 "channel 810"), reconstitutes the transport stream and applies it to a demultiplexer (a demultiplexer is also inherent for demultiplexing the individual compressed video streams of fig. 8 that were multiplexed into a single transport stream by multiplexer 808),

a control circuit at the transmitting station (see "rate controller 512 in Fig. 5) controlling the bit-rate of the MPEG coders (see encoders 520, 522, 524 in fig 5);

Zhang doesn't disclose that the MPEG streams are DVB streams,

or

wherein the modulating chain at the transmitting station comprises:

- a null-packet eliminator (60) for removing null packets from the transport

stream received from the multiplexer (32);

- an ACM modulator (62) downstream of the eliminator, which is

programmed for coding the stream with the maximum ruggedness allowed by the

rate of the incoming useful packets;

wherein the receiving station comprises :

- an ACM demodulator (64);

- a null-packet re-inserter (66) for re-inserting null packets in the transport

stream;

- an evaluator of quality of service (68) driven by the ACM demodulator

(64) for notifying the level of quality of the received signal to the bit-rate control

circuit [72] of the transmitting station via a return channel; and wherein the bit-

rate control circuit (72) is programmed to change the bit-rate of the VBR coder or

coders or generic data sources (31) depending on the level of quality of service

notified by the evaluator (68).

Elstermann, an inventor from the same or a similar field, discloses a system for transmitting DVB video (see "this invention can be used…..DVB specification for Data Broadcasting", col. 3 ll. 6-11)

wherein the modulating chain at the transmitting station (see Fig. 1, wherein the components of the system are at a transmission station, such as satellite or headend, see col. 3 ll. 66 – col. 4 ll. 4) comprises:

- a null-packet eliminator (see "null packet extraction and annotation packet generator 130", col. 3 ll. 6—66) for removing null packets from the transport stream received from the multiplexer (see "encoder/multiplexer 110" col. 3 ll. 49-53 and "encoder" col. 3 ll. 63-66);

wherein the receiving station (a set-top decoder see "data stream player" fig. 2 and col. 48-58)) comprises :

- a null-packet re-inserter (see "program player" in fig. 2 and "regenerate the null packet" col. 5 ll. 39-57) for re-inserting null packets in the transport stream.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for transmitting MPEG signals comprising: "a transmitting station in which a multiplexer (32) inserts null packets

in the MPEG streams originating from one or more 5 VBR coders or generic data sources (31) so that their bit-rates are made uniform, and multiplexes them into a single transport stream that is then applied to a modulating chain for transmission over a propagation channel", "a receiving station in which a demodulating chain receives the signal being transmitted over the channel, reconstitutes the transport stream and applies it to a demultiplexer", and "the modulating chain in the transmitting station comprising: a control circuit (72) controlling the bit-rate of the MPEG coders or generic data sources (31)" of Zhang with the system comprising: "a null-packet eliminator (60) for removing null packets from the transport stream received from the multiplexer (32)" at the transmitting station and "- a null-packet re-inserter (66) for re-inserting null packets in the transport stream" at the receiving station of Elstermann for the benefit of providing a bandwidth efficient system for providing real time programs with other content in the same transport stream without an impact on the quality of the real time content (as disclosed by Elstermann, see col. 1 ll. 51-63)

Neither Zhang nor Elstermann disclose

wherein the modulating chain at the transmitting station comprises:

- an ACM modulator (62) downstream of the eliminator, which is programmed for coding the stream with the maximum ruggedness allowed by the rate of the incoming useful packets;

wherein the receiving station comprises :

- an ACM demodulator (64);

- an evaluator of quality of service (68) driven by the ACM demodulator

(64) for notifying the level of quality of the received signal to the bit-rate control

circuit [72] of the transmitting station via a return channel; and wherein the bit-

rate control circuit (72) is programmed to change the bit-rate of the VBR coder or

coders or generic data sources (31) depending on the level of quality of service

notified by the evaluator (68).

Steer, an inventor from the same or a similar field discloses

wherein the modulating chain at the transmitting station comprises:

- an ACM modulator (62) downstream of the eliminator, which is programmed for

coding the stream with the maximum ruggedness allowed by the rate of the

incoming useful packets see "Adaptive coding and modulation techniques"

[0062], wherein "errors are held below the desired rate" [0065]);

wherein the receiving station comprises :

- an ACM demodulator (64) (an ACM demodulator is inherent at the receiver as well for the receiver to be able to decode the changing coding and modulation techniques of the transmitter above ;

- an evaluator of quality of service (see "channel estimation processor 504" [0029]) driven by the ACM demodulator (the data is demodulated at the receiver and compared to expected signals [0029]) for notifying the level of quality of the received signal (i.e. "error rate" [0065) to the bit-rate control circuit of the transmitting station via a return channel (the data rate/bit rate at the transmitter is changed to match the channel performance and the error rate, see [0065 and [0067]); and wherein the bit-rate control circuit (72) is programmed to change the bit-rate of the generic data sources (31) depending on the level of quality of service notified by the evaluator (68) (the data rate/bit rate at the transmitter is changed to match the channel performance and the error rate, see [0065 and [0067]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for transmitting MPEG signals comprising: "a transmitting station in which a multiplexer (32) inserts null packets in the MPEG streams originating from one or more 5 VBR coders or generic data sources (31) so that their bit-rates are made uniform, and multiplexes them into a single transport stream that is then applied to a modulating chain for transmission over a propagation channel", "a receiving station in which a demodulating chain

receives the signal being transmitted over the channel, reconstitutes the

transport stream and applies it to a demultiplexer", and "the modulating chain in

the transmitting station comprising: a control circuit (72) controlling the bit-rate of

the MPEG coders or generic data sources (31)", "a null-packet eliminator (60) for

removing null packets from the transport stream received from the multiplexer

(32)" at the transmitting station and "- a null-packet re-inserter (66) for re-

inserting null packets in the transport stream" at the receiving station of Zhang

and Elstermann with the system wherein the modulating chain at the transmitting

station comprises: " an ACM modulator (62) downstream of the eliminator, which

is programmed for coding the stream with the maximum ruggedness allowed by

the rate of the incoming useful packets see "Adaptive coding and modulation

techniques" [0062], wherein "errors are held below the desired rate" [0065])" and

wherein the receiving station comprises : "an ACM demodulator (64) (an ACM

demodulator is inherent at the receiver as well for the receiver to be able to

decode the changing coding and modulation techniques of the transmitter above;

" an evaluator of quality of service (see "channel estimation processor 504"

[0029]) driven by the ACM demodulator (the data is demodulated at the receiver

and compared to expected signals [0029]) for notifying the level of quality of the

received signal (i.e. "error rate" [0065) to the bit-rate control circuit of the

transmitting station via a return channel (the data rate/bit rate at the transmitter is

changed to match the channel performance and the error rate, see [0065 and

[0067]); and wherein the bit-rate control circuit (72) is programmed to change the

bit-rate of the generic data sources (31) depending on the level of quality of

service notified by the evaluator (68) (the data rate/bit rate at the transmitter is

changed to match the channel performance and the error rate, see [0065 and

[0067]) of Steer for the benefit of providing the highest possible data rate/bit rate

to the user given the current channel conditions.

Claim 2:

Elstermann discloses wherein the null-packet eliminator (see "null packet

extraction and annotation packet generator 130", col. 3 ll. 6—66) introduces into

the transmitted signal indications of the number and position of the eliminated

null packets (see fig. 4, wherein the null packets in stream 400, N1,1, N1,2, etc..

are replaced by AP1,1 in stream 410, wherein packet AP1,1 contains the

number and position of the null packets eliminated) and the null-packet re-

inserter (see "program player" in fig. 2 and "regenerate the null packet" col. 5 ll.

39-57) uses said indications to restore the null packets (also see col. 7 ll. 10-23).

Claim 6:

Zhang, Steer, and Elstermann disclose the system of claim 1.

Zhang discloses wherein the transmitting station further comprises a dummy

frame inserter controlled for inserting dummy frames in the stream when the

useful packets are not sufficient to feed the ACM modulator (see "filler frames"

[0051] and [0052].

8.　　Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Steer in further view of Elstermann in even further view of Ono et al. (hereinafter referred to as Ono) (of record).

Claim 5:

Zhang, Steer, and Elstermann disclose the system of claim 2 as discussed previously.

More specifically Elstermann discloses that the indications of the number and position of the eliminated packets consist of one or more Annotation Packets (see col. 7 ll. 10-23).

Neither Zhang nor Steer nor Elstermann disclose "wherein said indications of number and position of the eliminated null packets consist of at least one byte appended to each DVB packet applied to the ACM modulator, which value represents the number of null packets that have been deleted by the null packet eliminator before said DVB packet applied to the ACM modulator and after previous DVB packet applied"

Ono, an inventor from the same or a similar field discloses 8 bits (one byte)

appended to the end of a packet (see Fig. 5, where the number of the null

packets eliminated is appended at the end of useful packet, see col. 5 ll. 29-35).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the system of Zhang, Steer, and Elstermann, as

discussed in claim 2 with the system "wherein said indications of number and

position of the eliminated null packets consist of at least one byte appended to

each packet applied" of Ono for the benefit of being able to waste less bits in a

stream if the number of null packets in a particular stream is small.

Allowable Subject Matter

9.   Claims 3, 4, and 7-10 objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to SARI SAWAGED whose telephone number is

(571)270-5085. The examiner can normally be reached on Mon-Thurs, 9:00AM-

5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the
examiner's supervisor, ANDREW KOENIG can be reached on (571) 272-7296.
The fax phone number for the organization where this application or proceeding
is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from
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9199 (IN USA OR CANADA) or 571-272-1000.

/Sari Sawaged/
Examiner, Art Unit 2423

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2423